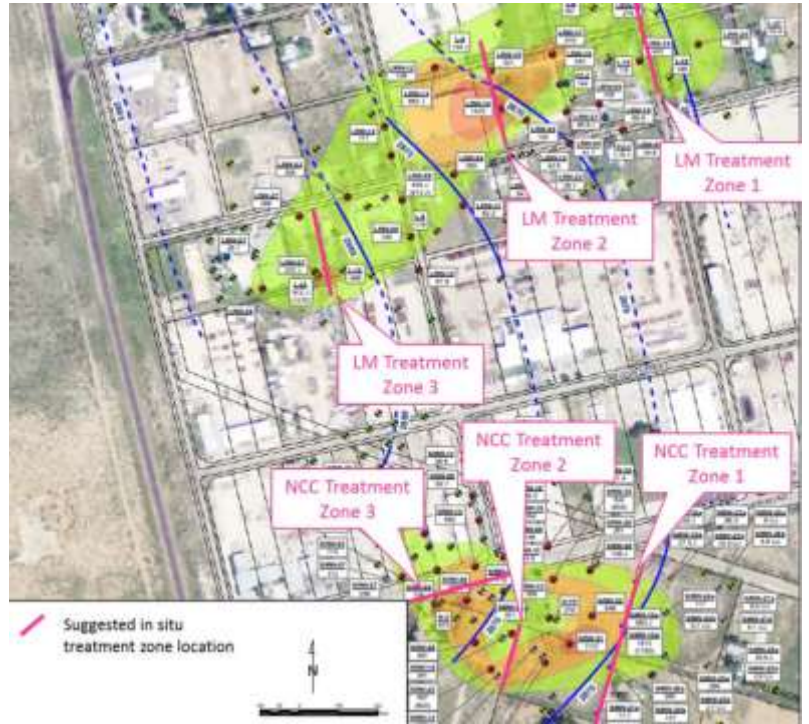


P&T Transition to ISB

Sprague Rd.
Odessa, TX
Metal Plating
Dates: 1996–2022
Superfund Site/NPL

P&T Objectives: Cr (VI) to 50
µg/L in effluent

Risk Scenario—
Contaminants detected in
drinking water supply
aquifer



The groundwater extraction and treatment remedy (P&T) became operational in 2003. The original remedial design included groundwater recovery and reinjection of treated water. Extracted groundwater was pumped to a central treatment unit at the property and treated by an ion exchange process unit. Region 6 requested an optimization review to evaluate current remedy performance and suggest remedy modifications before transitioning the site to state operation in 2019.

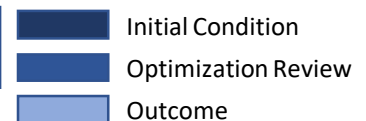
Remedies selected in the ROD included groundwater extraction and treatment for hydraulic containment, reinjection of treated water, vadose zone flushing, and long-term groundwater monitoring. Between 2010 and 2015, the P&T remedy was shut down while a new Photo-Cat treatment technology was pilot tested and installed. The soil flushing remedy was never operated during the 2003 to 2010 operation period.

The optimization team recommended implementation of the soil flushing remedy and further characterization of the source zone. Collection of soil samples from the vadose zone is challenging due to the caliche limiting drilling options to air rotary. Lack of understanding of the amount and distribution of Cr remaining in the vadose is the primary data gap at the site. The report notes that natural attenuation processes are not sufficient to control the spread of contamination.

Lines of evidence used to support the changes:

1. The Photo-Cat system has experienced numerous operational difficulties.
2. The P&T remedy was transferred to the state in 2019, and they monitor and maintain the system currently. Several recovery and injection wells were installed in 2019 to improve recovery and injection capacities based on the recommendations of the updated groundwater model that was done.
3. In 2018, the site used the infiltration galleries or other means to flush the Cr (VI) from the vadose zone to levels that ensure the area does not act as a potential continuing source of contamination or prevent the restoration of the groundwater under future land-use scenarios.

The site is preparing to codify changes in a ROD amendment based on findings from the in situ pilot tests.



P&T and ISB

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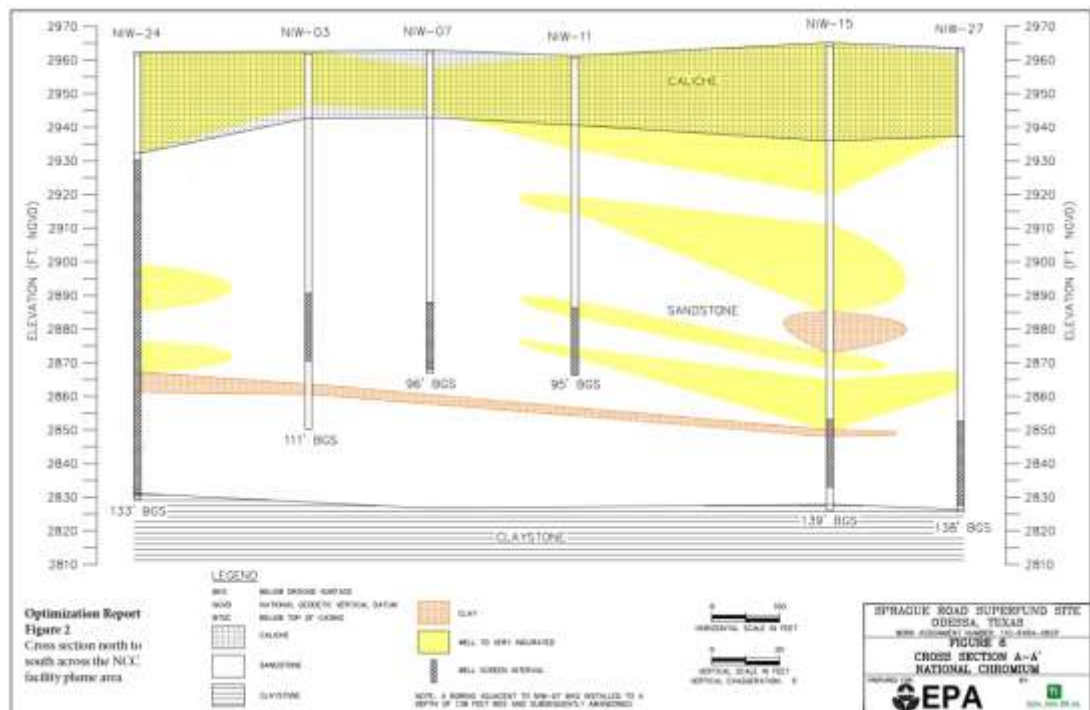
Additional Stakeholder Involvement: This optimization was triggered by the transfer of the site from the federal Superfund program to state O&M. The preexisting Photo-Cat system was shut down in November 2018 due to the high O&M cost and low treatment capacity.

Suggested Sequencing for Implementing Recommendations:

- Conduct in situ treatment pilot study (potentially ERD with EVO).
- Based on attempts to increase P&T capacity, determine whether P&T can be successful .
- Evaluate pilot study data and compare cost/performance data against potential use of P&T remedy.
- Implement full scale remedy.

At the site to date, an ion exchange treatment system has replaced the Photo-Cat treatment system for chromium removal from the extracted ground water. The system was brought online in January 2019. The new system has increased the effective pumping rate of the extraction system. ISB (ERD with EVO) was successfully applied in 2020 to contaminant hot spots.

A ROD amendment is being prepared to combine in-situ treatment in the high concentration areas of the plume with P&T for hydraulic containment.



P&T Actions Conclusion

P&T ongoing in addition to ISB

Time Span: 20 years

Remedy effectiveness improvement: Shift focus to source zone removal in and beneath caliche layer

Sustainability benefits: Decommissioning inefficient wells and Photo-Cat system

- Initial Condition
- Optimization Review
- Outcome